

Observing Process Skills in Action

One way to identify the science process skills is by what learners actually do when they are using the skills. The following list provides examples.

Observing

When observing, learners are:

- identifying differences and similarities between objects or materials
- using tools or instruments as necessary to extending the range of the senses
- distinguishing from many observations those which are relevant to the problem at hand

Questioning

When questioning, learners are:

- readily asking a variety of questions about phenomena
- recognizing differences between questions that can and cannot be answered by investigation

Hypothesizing

When hypothesizing, learners are:

- attempting to give explanations which are consistent with evidence or with ideas from prior experiences
- showing that they are aware that there may be more than one explanation that fits the evidence

Predicting

When predicting, learners are:

- making use of evidence from experience or a possible explanation (hypothesis) in forecasting the outcome of a specific future event
- using patterns in information or observations in forecasting outcomes of specific events that go beyond the data (extrapolations)

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Planning and Investigating

When planning and investigating, learners are:

- for a fair test, identifying the variable that has to be changed, the things that should be kept the same, and what to look for or measure to obtain a result in an investigation
- comparing what they actually did with what they planned

Interpreting

When interpreting, learners are:

- discussing what they find in relation to their initial questions
- identifying patterns or trends in their observations or measurements and noticing related changes

Communicating

When communicating, learners are:

- using drawings, writing, models, and paintings to present their ideas, and using tables, graphs, and charts to record and organize results
- choosing forms for recording or presenting results that are appropriate for the type of information collected and presented, and appropriate for the audience